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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/524,298

07/28/2005

Jean-Pierre Gaechter

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EXAMINER

PILKINGTON, JAMES

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/524,298	Applicant(s) GAECHTER, JEAN-PIERRE	
	Examiner JAMES PILKINGTON	Art Unit 3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/13/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 5/13/05 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Objections

2. Claim 1 objected to because of the following informalities: line 10 reads "with respect to the nut, wherein the inner face" for clarity purpose the examiner recommends changing this to read - - with respect to the nut the inner face- -. Appropriate correction is required.

3. Claim 11 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The examiner recommends changing "is comprised of a widened re-circulation zone for the balls defined" to - - wherein the widened re-circulation zone for the balls is defined...- -.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear what the applicant means by the limitation "two by two." Is the applicant claiming there are two grooves or that each beveled surface when arranged side by side makes the groove?

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hogan, USP 2,756,609, in view of Brusasco, USP 4,138,902.

Hogan discloses an actuator comprising:

- a first tubular body (34)
- a nut (between 31 and 32) positioned inside the tubular body (34) and having at least a generally helical ball-race (see Figure 2) with a helical portion extending about the nut according to an angle of less than 360 degrees and a widened portion (at 39) connecting the ends of the helical portion, said widened portion (at 39) forming a re-circulation zone for balls

(38) arranged between the ball-race and the inner surface of the tubular body (34)

- a driving means (20/21) for rotating the nut, in order to ensure the displacement in translation of the tubular body (34) with respect to the nut the inner face of the first tubular body comprises helical ball-races for guiding the balls
- wherein said nut comprises several ball-races (one between each disk 28), each of the ball-races having a re-circulation zone (39) for the balls and re-circulation zones for the balls are not aligned in a direction of translation of the actuator (the mating re-circulation zone of the next disk is offset and therefore not aligned in a direction of translation)
- wherein the ball-races are so arranged that the re-circulation zones (39) are regularly angularly distributed about the direction of translation of the actuator (since the re-circulation zones are not in a line they are regularly angularly distributed in so much as their angular pattern/location is predictable, see Figure 2)
- wherein said nut comprises several aligned elements (each disk 28) of a cylindrical general shape (see Figure 7), with a straight cross-section, one circular edge of each element having at least one bevel (36) forming a helical cam surface, the bevels (36) form the helical ball-races in which balls (38) are positioned

- wherein the ends of each helical cam surface (36) forms a setback (at 39) of a conical general shape, and wherein two elements (28) are so positioned with respect to each other that their setbacks (39) are facing each other, said setbacks (39) forming the re-circulation zone for the balls (38) (see Figure 2)
- wherein prestressing (by spring element (33) exerted on the balls (38) is generated by tightening the elements (28) with respect to each other
- another nut (24) for adjusting the elements (28) in order to control the prestressing exerted on the balls (38)
- a springy means (washer on end of nut 24) interposed between the adjusting nut (24) and the elements (28) of the nut, through which the adjusting nut exerts a prestressing on the elements (since everything is elastic the washer is indeed springy means)
- the setbacks being positioned in front of each other in an opposite ways (i.e. they face each other)

Hogan does not disclose that the first tubular body comprises a helical ball race which is substantially equal to the helical pitch of a ball race of the nut.

Brusasco teaches a first tubular body (15) that comprises a helical ball race (for balls 4) which is substantially equal to the helical pitch of a ball race of the nut for the purpose of assuring the pitch movement of the balls and the moving body are correct (C1/L48-52).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hogan and provide the first tubular body with a helical ball race which is substantially equal helical pitch of a ball race of the nut, as taught by Brusasco, for the purpose of assuring the pitch movement of the balls and moving body are correct.

NOTE: Re clm 13, the method of making the races in the tubular body is a producted-by-process limitation, see MPEP 2113.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hogan '609 in view of Brusasco '902 and further in view of Barrett, USP 2,299,785.

Hogan and Brusasco disclose all of the claimed subject matter as disclosed above. Hogan further discloses that the drive means is a motor (20).

Hogan and Brusasco do not disclose that the motor is mounted fixed inside a second tubular body being drivable in translation with respect to the first tubular body.

Barrett teaches a motor (20) that is mounted fixed inside a second tubular body (11) being drivable in translation with respect to the first tubular body (17) for the purpose of providing an actuator that has a low manufacturing cost, simply construction and an extremely low capacity coupling with ground with a high leakage resistance to ground (C1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hogan in view of Brusasco and provide a motor that is fixed inside a second tubular body being drivable in translation with respect to the first

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tubular body, as taught by Brusasco, for the purpose of providing an actuator that has a low manufacturing cost, simply construction and an extremely low capacity coupling with ground with a high leakage resistance to ground.

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hogan '609 in view of Brusasco '902 and further in view of Gould, USP 2,936,646.

Hogan and Brusasco disclose all of the claimed subject matter as disclosed above.

Hogan and Brusasco do not disclose that the ball-races at the level of the inner surface of the first tubular body are comprised of at least one wire positioned in the shape of a spiral inside the first tubular body.

Gould teaches a ball-race formed on the inner surface of a tubular body (42) comprising at least one wire (38) positioned in the shape of a spiral inside of the first tubular body (42).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hogan and Brusasco and provide a ball-race formed on the inner surface of a tubular body comprising at least one wire positioned in the shape of a spiral inside of the first tubular body to yield the predictable result of providing a groove for the balls that is cheaper to manufacture but still supports and moves the balls at an even pitch.

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10. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hogan '609 in view of Brusasco '902 and Gould '646 and further in view of Devenyi, USP 5.636.549.

Hogan in view of Brusasco and Gould discloses all of the claimed subject matter as disclosed above.

Hogan in view of Brusasco and Gould does not disclose that the wire thread comprises a first wire positioned in the shape of a spiral inside the first tubular body, on which the balls rest and a second intercalated wire having a diameter smaller than that of the first wire and extending between the windings of the first wire.

Devenyi teaches a spiral thread comprising a first wire (16) positioned in the shape of a spiral and a second intercalated wire (17) having a diameter smaller than that of the first wire and extending between the windings of the first for the purpose of maintaining a space and the correct pitch between the first wire (C2-C3/L66-12).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hogan in view of Brusasco and Gould and provide a first wire and a second intercalated wire between the windings of the first, as taught by Devenyi, for the purpose of maintaining a space and the correct pitch between the first wire.

11. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hogan '609 in view of Brusasco '902 further in view of Halasy-Wimmer, US PGPub 2004/0093973.

Hogan in view of Brusasco discloses all of the claimed subject matter as disclosed above.

Hogan in view of Brusasco does not disclose an inner tube arranged in the tubular body and welded to the body, the inner tube comprising the ball-races.

Halasy-Wimmer teaches an inner tube (8) arranged in the tubular body (9) and welded to the body (see claim 6), the inner tube (8) comprises the ball-races for the purpose of providing a device with a considerable reduction in manufacturing costs due to non-cutting fabrication (paragraph 0004).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hogan in view of Brusasco and provide an inner tube arranged in the tubular body and welded to the body, the inner tube comprising the ball-races, as taught by Halasy-Wimmer, for the purpose of providing a device with a considerable reduction in manufacturing costs due to non-cutting fabrication.

12. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hogan '609 in view of Brusasco '902 further in view of Yapple, USP 5,358,265.

Hogan in view of Brusasco discloses all of the claimed subject matter as disclosed above.

Hogan in view of Brusasco does not disclose a third tubular body, the first tubular body being connected to a second nut, rotation of the second nut causing the displacement in the translation of the third body with respect to the first.

Yaple teaches a multiple tube system comprising a third tubular body (16c), a first tubular body (16b) being connected to a second nut (72 on 16c), rotation of the second nut causing displacement in the translation of the third body (16c) for the purpose of providing an actuator comprising at least three telescoping members which allows for additional length of actuation (C4/L1-33).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hogan in view of Brusasco and provide a third tubular body, the first tubular body being connected to a second nut, rotation of the second nut causing the displacement in the translation of the third body with respect to the first, as taught by Yaple, for the purpose of providing a device with a considerable reduction in manufacturing costs due to non-cutting fabrication.

13. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hogan '609 in view of Brusasco '902 further in view of Laskey, USP 6,101,889.

Hogan in view of Brusasco discloses all of the claimed subject matter as disclosed above.

Hogan in view of Brusasco does not disclose that the first tubular body is made of aluminum, KEVLAR, carbon fibers or molded plastic.

Laskey teaches a tubular body made of aluminum (C3/L8-19) for the purpose of providing a material suitable for the load.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hogan in view of Brusasco and provide for the first

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tubular member being made out of aluminum, as taught by Laskey, for the purpose of providing a material suitable for the load being handled.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES PILKINGTON whose telephone number is (571)272-5052. The examiner can normally be reached on Monday-Friday 8:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. P./

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Examiner, Art Unit 3682

5/1/08

/Richard WL Ridley/

Supervisory Patent Examiner, Art Unit 3682